

REMARKS

The Examiner rejected Claims 1-6 under 35 U.S.C. 112, second paragraph.

Regarding Claim 1, the Examiner stated that "said white stripes" lacks proper antecedent basis. The above amendments cure this defect.

Regarding Claim 4, the Examiner stated that it is unclear in its given context how the first array of photodetectors is divided into a second and third array, yet the third array is offset from the first array. The above amendments cure this defect.

Regarding Claim 6, the Examiner stated that "said channel signals" lacks proper antecedent basis. The above amendments cure this defect.

The Examiner rejected Claims 1, 2, 4 and 6 under 35 U.S.C. 102(b) as being anticipated by Minami, *et al* (hereafter "Minami")(US 4,529,964). Applicant submits that Claim 1, as amended above, and the claims dependent therefrom are neither anticipated by or obvious in view of Minami and the prior art discussed in Figures 4 and 6 of the present application.

The above amendment to Claim 1 places the limitation of Claim 4 into Claim 1 and further limits the claim by specifying the offset distance. The Examiner looks to the teaching in Minami that there is a dead space between each pair of detectors. According to the Examiner, the array taught in Minami can be arbitrarily broken into two sub-arrays that are offset by a distance equal to this dead space. As noted in the present application, the offset must satisfy a specific condition for the encoder to operate in the intended manner. Such an offset is not taught in Minami.

Furthermore, as noted in the present application, dividing the photodetector array into sub-arrays allows less expensive photodetectors to be utilized. In addition, such a division allows existing smaller arrays of photodetectors to be used, and hence, avoids the cost of constructing a custom photodetector array. Accordingly, this distinction is not merely a matter of design choice.

The Examiner rejected Claims 3 and 5 under 35 U.S.C. 103(a) as being unpatentable over Minami in view of Applicant's admitted prior art (figs 4-6). Applicant traverses this rejection.

To sustain a rejection under 35 U.S.C. 103, the Examiner must show that the combined references teach each of the elements of the claim or that there is some motivation in the art for altering one of the teachings to arrive at the combined set of teachings. "The mere fact that a reference could be modified to produce the patented invention would not make the modification obvious unless it is suggested by the prior art." (*Libbey-Owens-Ford v. BOC Group*, 4 USPQ 2d 1097, 1103). "When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference" (*In re Rijckaert*, 28 USPQ2d, 1955, 1957). In addition, the Examiner must show that there is some motivation in the art that would cause someone of ordinary skill to combine the references, and that in making the combination, there was a reasonable expectation of success. Where the claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under section 103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success... Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's disclosure. *In re Vaeck*, 20 USPQ2d 1438, 1442(CAFC 1991).

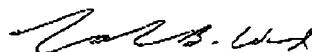
With respect to Claim 3, the Examiner argues that the prior art arrangement shown in Figure 4 of the present application can be substituted for the photodetector array taught in Minami to teach a device that satisfies the limitations of Claim 3. Applicant must disagree. The prior art arrangement shown in Figure 4 places the complementary array at an offset equal to a multiple of the width of the detectors, i.e., a multiple of d . However, to provide a working encoder in the Vernier system taught in Minami and the present application, the offset must be changed to an odd multiple of D , as noted in the present application. Hence, there is no reasonable expectation of success in making the substitution suggested by the

Examiner. Furthermore, the Examiner has not pointed to any teaching in Minami or the art that would cause someone of ordinary skill to make that alteration. Hence, Applicant submits that the Examiner has not made a *prima facie* case for obviousness with respect to Claim 3. The above amendments to Claim 3 place the claim in independent form and cure the antecedent basis problems mentioned above.

With respect to 5, the Examiner maintains that it would be obvious to offset the detectors shown in Minami in the claimed direction because it would provide a more compact design. The Examiner's argument assumes that Minami teaches two groups of detectors that can be moved with respect to one another. The Examiner has not pointed to any teaching in Minami that the detectors can be moved with respect to one another. The detector array taught in Minami is a linear detector array. An array divided in the claimed manner is not a linear detector array. Hence, if anything, Minami teaches away from the claimed invention. Accordingly, Applicant submits that the Examiner has not made a *prima facie* case for obviousness with respect to Claim 5. The above amendments to Claim 5 place the claim in independent form and cure the antecedent basis problems mentioned above.

I hereby certify that this paper is being sent by FAX to 517-273-8300.

Respectfully Submitted,



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